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T R A I L & L A N D S C A P E

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THE OTTAWA FIELD-NATURALISTS' CLUB

- Founded 1879 -

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Objectives of the Club: To promote the appreciation, preservation and conservation of Canada's natural heritage; to encourage investigation and publish the results of research in all fields of natural history and to diffuse information on these fields as widely as possible; to support and co-operate with organizations engaged in preserving, maintaining or restoring quality environments for living things.

Club Publications: THE CANADIAN FIELD-NATURALIST, official journal of the Club, devoted to the publishing of research in natural history. TRAIL & LANDSCAPE, a non-technical publication of general interest to local naturalists.

Field Trips, Lectures and other natural history activities are arranged for local members. See inside back cover.

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Vol 4 No 1

TRAIL & Landscape

Published by
THE OTTAWA FIELD-NATURALISTS' CLUB

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THE ANNUAL BUSINESS MEETING

An excellent review of the Club's immediate past achievements and future directions was given by retiring president Hue Mackenzie at the annual meeting December 8, 1969. During the last three years, significant steps have been taken to make the Club more outgoing in its interests and activities. These steps include constitutional revision, creation of T&L, and improvement of communication within the Club, in part by more frequent general meetings. Looking to the future, Hue foresaw important Club concerns would be land acquisition, the need for a strong national conservation organization, action against pollution, and -- more specifically -- acting as host to the 1971 annual meeting of the Federation of Ontario Naturalists.

The evening's guest speaker was the FON's new executive director, Gerald McKeating. He outlined some current concerns of the FON. These include classification of roads to prevent unnecessary destruction of scenic qualities; work on land zoning recommended in a recently released report on the Niagara Escarpment; legislation to protect wildflowers from commercial exploitation and over-avid collectors; and the need for continued alertness to protect the wolf.

Topics raised by Club members included several suggestions for specific natural areas thought worth saving, and the question of attempting to arrange Club access to privately held lands. It was suggested that communication within the Club would be improved by publication of a list of members with their interests.

If the evening's discussions had a common theme, voiced by Hue Mackenzie, Gerald McKeating, and several Club members, it was the need for greater involvement and participation on the part of individuals concerned with their environment.

The meeting closed with most enjoyable slides of the many species of birds and plants seen on an FON expedition to Churchill, Manitoba, in early summer.

BJC.

Editor, T & L

In view of certain developments at Shirley's Bay concerning pollution at Watt's Creek, the marsh and large bay behind the rifle ranges may be flooded. This would be accomplished by dams connecting the islands at the perimeter of the marsh, thus providing a suitable area for a third-stage sewage treatment lagoon. This would be an irreparable mistake.

As well as being a good general area for viewing the flora and fauna of Ottawa, Shirley's Bay has several outstanding characteristics: It has one of the largest marshes in the Ottawa area, in which nests a variety of waterfowl and other birds. It possesses a commanding view of Lake Deschenes along the Ottawa River. It is an important migratory stop-over for land and water birds. Its woods contain a variety of vegetation and nesting birds. But the most remarkable feature is that it is only ten miles from downtown Ottawa along Highway 17.

This, however, is not the only problem. Behind the rifle ranges at the edge of the marsh, there is a garbage dump which not only detracts from the natural surroundings, but encroaches on the marsh. As if this were not enough, someone wishes to buy the Shirley's Bay area and develop it for one reason or another. This will be possible when, in a few years, the rifle ranges are removed to be relocated, possibly in western Canada. It must be remembered that the only reason that Shirley's Bay has remained in its present state for so long is because of the rifle ranges, which do not allow for the building of government offices at the present time. Therefore, we must act now to conserve Shirley's Bay as a "Federal Wildlife Preserve". The badly needed sewage treatment lagoon could just as easily (with possibly less cost) be installed in the fields where the ranges are at present. A similar situation exists at Almonte and appears to be satisfactory.

We cannot remain complacent any longer. In a few years Shirley's Bay will be lost forever if something isn't done today, and there will never be another one.

Brian Morin
306 First Ave.

A SUGGESTION by Derek Munro

Wouldn't it be wonderful if the OFNC had the right to use a piece of land near Ottawa for its own use?

One of the suggestions at the October general meeting of the club was to obtain such an area. Some of our members are looking for a superb area with gorges, waterfalls, a marsh and forests. Such a place would not only need a great deal of money to acquire, but it is unrealistic in that this land, if it exists, would be too far away from Ottawa to be practical.

The Macoun Field Club, a junior affiliated club, has a study area. In 1967 the Senior group of the club felt that it would be well worth while if they could acquire a relatively natural and diverse area to use for scientific projects and field trips. An area was finally decided upon about two miles south of Bell's Corners on Moodie Drive. Since this is in the Greenbelt it was necessary for Dr. Irwin Brodo, Macoun Club chairman, to contact the NCC. They were enthusiastic and gave permission to use the area for Macoun nature projects. The only request the NCC made was that copies of any reports be sent to them.

Instead of waiting to find an ideal area, let's contact the NCC about having the use of an area in the Greenbelt for our nature area. By stating that a minimum of disturbance will be caused, that its purpose is the study and appreciation of nature, and that it will be a non-commercial undertaking, I'm sure that the NCC would welcome such use of its presently stagnant Greenbelt land by a respected organization. Probably for very little an old log or plaster-chinked cabin could be acquired. This, after being taken apart, moved and reassembled, would make a perfect 'Nature Shack'. It would serve as a focal point of operations for the area, being a display building, information area, and central meeting place. Various trails could be laid out through the most interesting landscape; trees, flowers, animal homes and geological formations could be labelled. A weather station could be established, and regular nature interpretation walks held. A winter bird feeding station could be established, with seed provided by the club. It would be easy to draw on the resources

and the knowledge of club members in the construction of a nature area.

The establishment of such an area close to Ottawa will mean more involvement of members, which will increase the activities, participation and interest in the club. Many members are interested in only one or two fields, but by centralizing all fields into one area the club will achieve its most important aim: the broadening of the scope with which its members and the general public will appreciate nature. And this will most certainly be an ideal place to raise the public's interest in preserving the natural environment. It will serve as a showcase of the many varied and wondrous sides of natural life.

The Macoun Club received permission from the NCC, so why can't we take a lesson from the juniors? In fact, the Macoun Club area or adjoining area would be an ideal location. The landscape is varied; and speaking from personal experience, the flora and fauna are abundant and vary as much as the habitats.

But whatever is decided it must be done now. The longer the OFNC waits the harder it will be for the club to find wilderness close to Ottawa. This suggestion is offered because of its relative simplicity and its vital need to the club. Such an area acquired and established this spring would serve as a base of operations and a unifying force which will improve the OFNC and make it an even better club to belong to.

There are many 'man-made' parks and trails around Ottawa; now let us try to establish a 'nature-made' area. Instead of looking for a superb area, let us act now in the establishment of the Ottawa Field-Naturalists' Club Nature Area.

* * *

Editor's note: Expressions of support for this idea, suggestions for another suitable area, or offers to assist in construction, would be passed along promptly to the President or to other members of the Council. I would be glad to relay such messages if you wish to call 749-2400 during the day.

THE OPOSSUM SHRIMP OF THE OTTAWA REGION

by M. J. Dadswell
Department of Biology
Carleton University

and E. L. Bousfield
National Museum of Natural Sciences

Eleven thousand years ago when the great continental glacier lay just north of Ottawa and much of the land was covered by cold shallow lakes, the opossum shrimp would have been seen quite commonly around the shoreline by primaeval man. As the glacier regressed, the waters receded to their present basins and became warmer. The opossum shrimp, being intolerant of warm water, retreated into the depths of the remaining lakes. Today the shrimp is found in the Ottawa region only in the large deep lakes (those over 80 feet deep) and because of its particular habitat is rarely seen.

The fresh-water opossum shrimp, Mysis relicta (Loven), is a member of a very ancient and morphologically primitive Order of crustaceans, the Mysidacea. Most of its present-day relatives are marine or estuarine organisms swimming in close proximity to the bottom. Several species may be found readily in tidal pools of the St. Lawrence estuary below Quebec City. Mysis relicta itself occurs along brackish margins of arctic seas. A very few other mysids, like relicta, have adapted themselves to the fresh-water environment. Our opossum shrimp occurs in deep lakes around the rim of the Laurentian Shield and westward across Canada to the Rocky Mountains. It also occurs in lakes throughout northern Europe and Asia.

Mysids superficially resemble small slender crayfish with elongate antennae (Fig. 1). The first antenna is two-branched and, in the male, also bears a slender setose club-like organ. The second antenna has a single long flagellum and a broad blade-like squame that has a minute second segment near its tip (Fig. 3A). The carapace of Mysis has only a very short anterior rostrum and does not cover the upper surface of the last one or two thoracic segments. Respiration takes place through

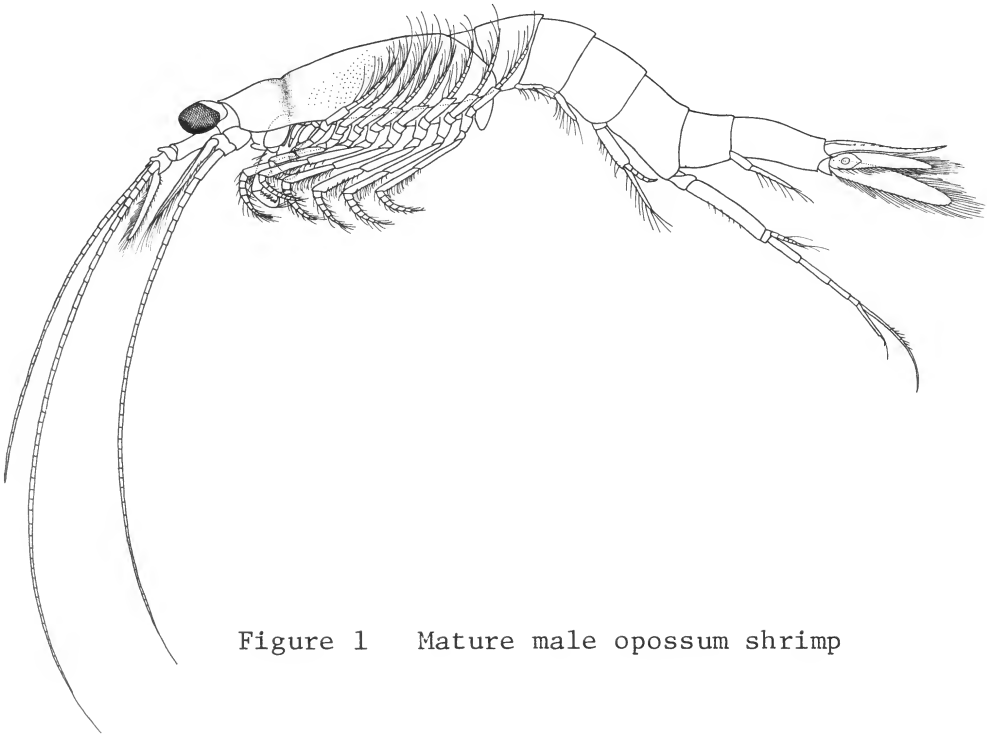


Figure 1 Mature male opossum shrimp

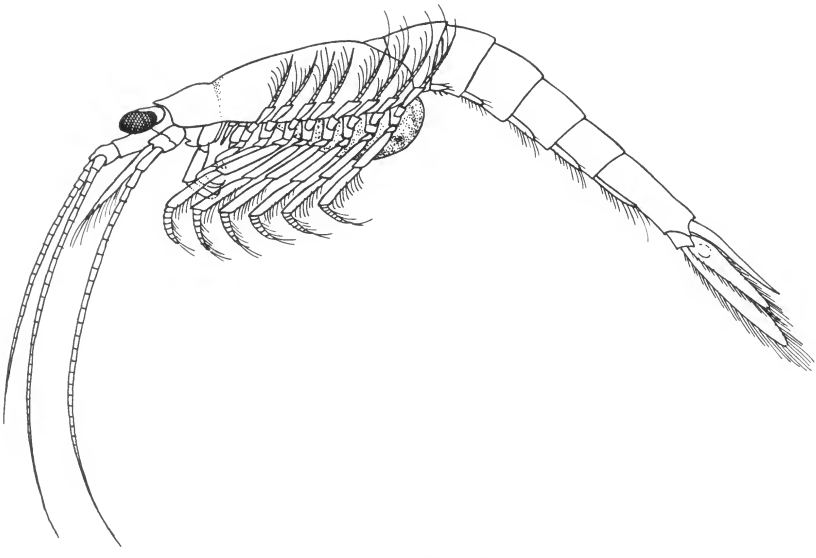


Figure 2 Female opossum shrimp

THE OPOSSUM SHRIMP OF THE OTTAWA REGION, lateral views

the thin lining of the carapace since the opossum shrimp lacks gills.

Unlike crayfish and other decapod shrimps that have five pairs of stout thoracic walking legs (the first large and pincer-like), the mysid shrimp has six pairs of slender, conspicuously biramous (two-branched) thoracic limbs with extensively developed swimming hairs. The exopods (outside branch of each leg) extend laterally out (upwards in drawing) from the body and are in continuous, smoothly rhythmic swimming motion, except when the animal is resting on the bottom. The endopodites (inner leg branch) are longer and heavier and project forward and inwardly. Their constant motion sets up a water current that passes over the mouthparts of the animal. The first two pairs of thoracic limbs are also biramous but the endopodites are short, setose, and function as accessory mouthparts or maxillipeds. The minute plankton and floating particulate matter on which the mysid feeds is strained from this current by means of the maxillipeds and conveyed to the mouth by the two pairs of maxillae, assisted also by the stout mandibular palp.

Under normal conditions, a mysid superficially looks like a tiny fish fry with two bead-like eyes. These stalked, compound eyes have a coppery glow that is seen just after the animal is brought up from deep water. When the shrimp is alive its body is nearly colorless and transparent, except for a row of chromatophores or pigment cells along the upper surface of the six-segmented abdomen. The chromatophores expand and contract under nervous control. Darkly pigmented animals (pigment cells fully expanded) tend to occur in brown-coloured humic lakes of the Precambrian Shield.

The first five segments of the cylindrical abdomen of the females and immatures bear a pair of very short one-branched pleopods closely appressed to the under surface (Fig. 2). Mature males, however, have biramous 3rd and 4th pleopods. The 4th pleopod is long and specialized and extends past the tail fan of the last abdominal segment (Fig. 1 and 3B). This organ functions in sperm transfer. The tail fan consists of a central spinose telson, cleft at tip, and a pair of two branched feathery setose uropods, the inner branch of which has a round statocyst for maintaining balance (Fig. 3D,E.F).

The females have oostegites or brood plates originating at the base of the last two pairs of thoracic legs (Fig. 2). These are curved plates that hold the developing eggs against the body of the female. The opaque pigmented pod (and eggs) has the appearance and function of a marsupium, hence the name "opossum shrimp"

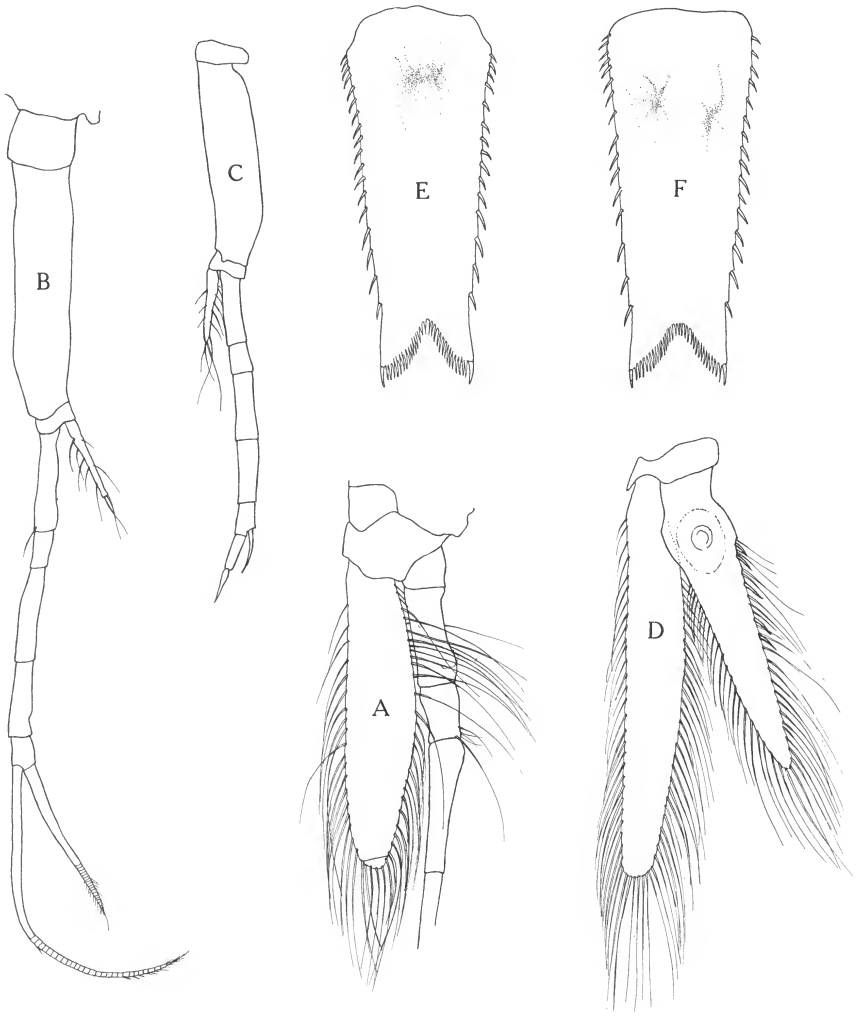


Figure 3 APPENDAGES OF THE OPOSSUM SHRIMP

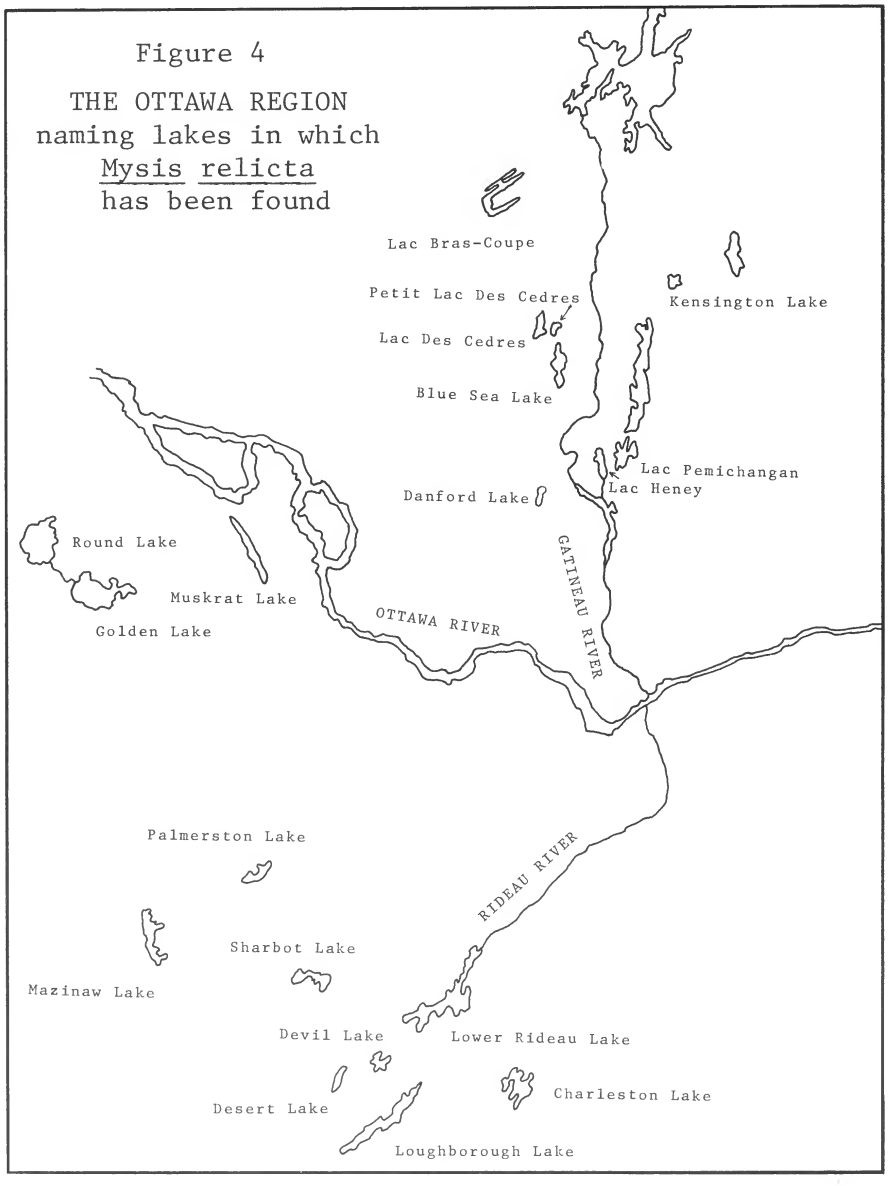
A - antennal scale
B - pleopod 4, mature male
C - pleopod 4, penultimate male
D - uropod
E, F - telson, variations

Reproduction takes place usually during the fall and winter, although in some very deep lakes (e.g. Charleston Lake, 300 ft.) breeding may occur year-round. On the average, a female produces 20 eggs per clutch. The developing eggs and young may be carried up to 3 months, the young leaving the mother when they reach about 3 mm. in body length. The life cycle lasts two years during which the female produces two broods.

The opossum shrimp is a cold-water species that, in the southern part of its range, is confined to summer water temperatures no higher than about 45-55°F. Also, during the day the entire shrimp population in a lake may be confined to the bottom mud or very deep water where light intensity is less than 1 lux. At dusk, in response to a positive phototropism (i.e. a tendency to move towards a light source) for weak light developed during the day, the mysids migrate upwards sometimes right to the surface. The migration is usually stopped at the thermocline, the sharp temperature boundary between the warm upper layer and cold deep layer of the lake. There the animals can presumably take advantage of a richer planktonic food supply. During the night the shrimps develop a negative phototropism (i.e. tendency to move away from a light source) and at the first peep of dawn retreat to the depths. In very deep lakes such as the Great Lakes, this rapid vertical migration may encompass 600 feet, no mean feat for an animal which, when fully grown, is only about one inch long.

The opossum shrimp is a very important food source for fish such as smelt, lake herring, and lake trout. Mysids sometimes comprise up to 100% of the food eaten by lake trout of less than 12 inches in length. For this reason, fisheries biologists have recently been planting mysids in many deep lakes where they do not occur naturally but where larger populations of sports fishes are desired.

In the Ottawa region, populations of Mysis relicta occur naturally in the deep lakes of the Gatineau Valley, the Pembroke area, and in the Rideau Lakes (Fig. 4). Should you see these animals, perhaps by opening the stomach of a freshly caught lake trout, please notify the senior author at the Department of Biology, Carleton University.



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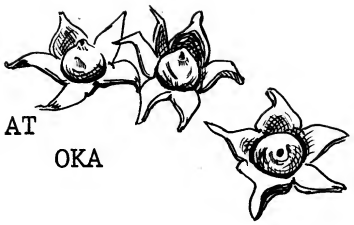
This article is the second in a series on the Crustacea of the Ottawa region. Mr. C.H. Douglas, NMNS, kindly assisted in the preparation of the line illustrations.

FUNGUS FORAY AT OKA



J. Walton Groves

Members of the Ottawa Field-Naturalists' Club were invited by Le Cercle des Mycologues Amateurs of Montreal to join them in a mycological foray at one of their favourite collecting grounds near Oka, Quebec, on Saturday, September 27th. Despite rather unpromising weather, about fifteen people made the trip to Oka where they were welcomed by a large and enthusiastic group from the Montreal club under the leadership of Father J. A. Potvin and Father Bernard Taché.

The area provided a good choice of both open and wooded terrain. The woods were predominantly coniferous with a good proportion of pine, and the collecting was good. The weather had been quite dry in the Ottawa district for some time previously and the mushroom collecting was poor, but conditions seemed much better at Oka, and when the group assembled for lunch the collecting baskets were loaded with many species of mushrooms, boletes, hydnums, polypores, coral fungi, puffballs, stinkhorns, and cup fungi. The interests of the Montreal group were predominantly gastronomic and several good edible species were collected in considerable quantity.

Rain commenced shortly after lunch and most of the Ottawa group left early in the afternoon, but it had proved to be a most interesting meeting with our Montreal colleagues, and their kind invitation to join them was much appreciated.

Among the group from Ottawa was a visitor, Dr. Mary Noble, a distinguished mycologist from Edinburgh, Scotland, who happened to be visiting the Plant Research Institute on her way home from the Philippines, where she had been assisting in giving courses in the detection, identification, and control of seed-borne fungi. These courses were attended by plant pathologists from several countries in south-east Asia and were organized by the Institute for Seed Pathology for Developing Countries, and sponsored

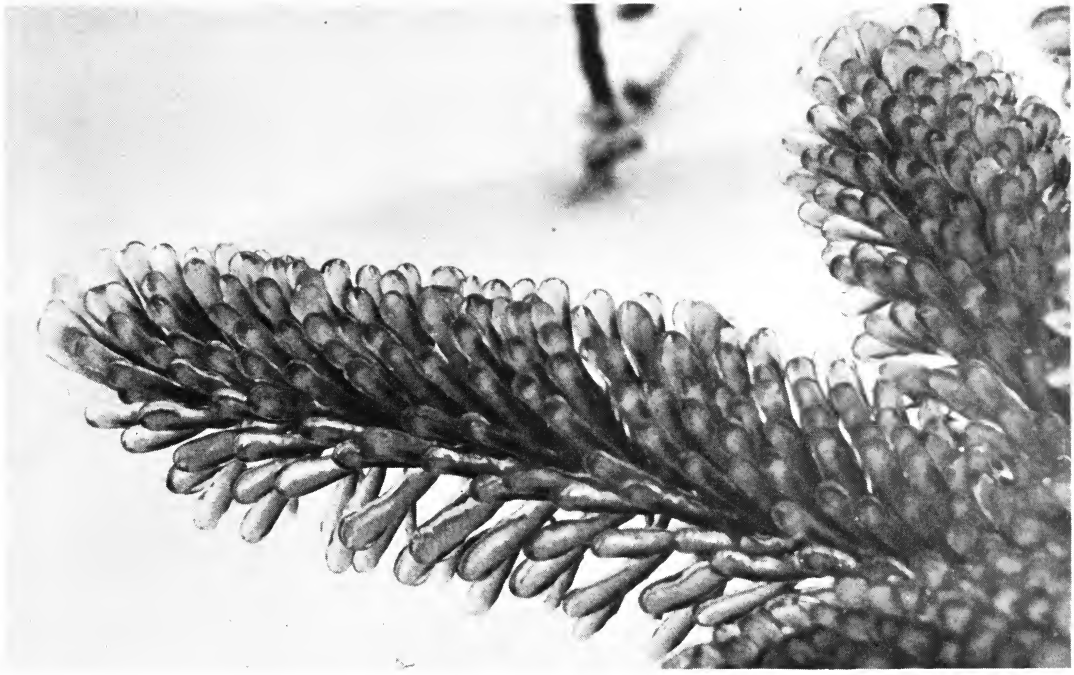
by the Government of Denmark. This was Dr. Noble's first visit to Canada and she was most interested in our forest vegetation as well as the fungi.

OTTAWA FIELD-NATURALISTS with Le Cercle des Mycologues Amateurs of Montreal at Oka, Quebec, September 27, 1969

* * *

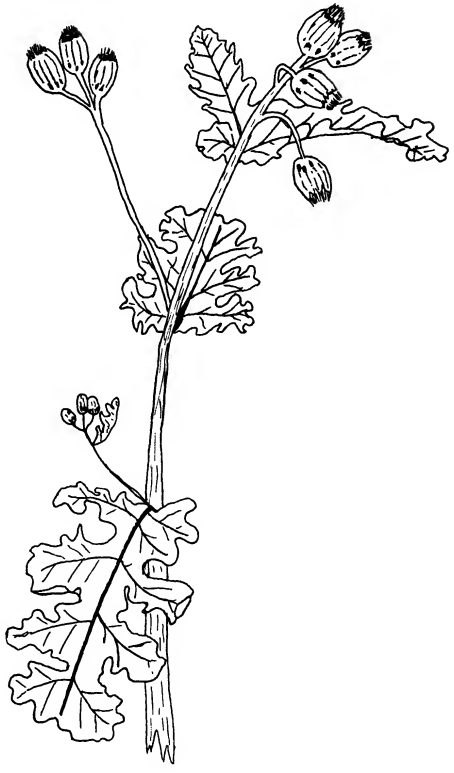
Meanwhile, in Gatineau Park .....

Concurrently, a local group, about twenty-five, visited the hillside woods by Meach Lake. Despite the drizzle, terminating a long droughty season, a remarkably wide variety of boletes, gill-fungi and puffballs was found. Sheila Thomson was kept busy explaining and identifying the types encountered. Earthstars, a stinkhorn in 'ripe' condition, and brackets of all sizes and colours attracted particular attention. Useful information was gained by having the distinctive features of the toxic Amanita expertly pointed out. ..W.G. Dore



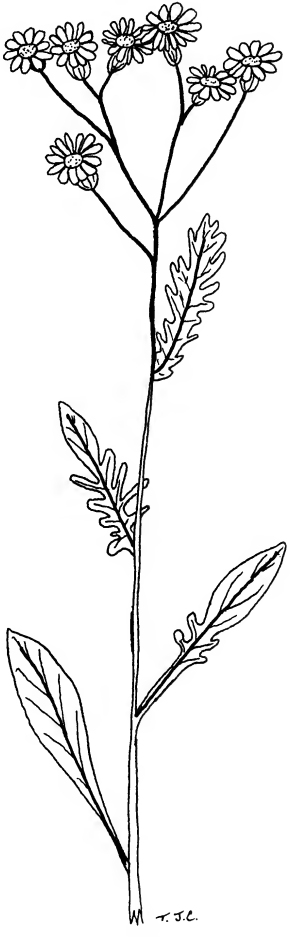
After the Ice Rain

Photographs by Marguerite Sweers



S. vulgaris

S. viscosus



S. pauperculus

THE STICKY GROUNDSEL

T. J. Cole

On a family outing to Fitzroy Harbour Provincial Park in September 1968, while botanizing along the foot of the shale cliffs I came across a species of groundsel that did not look quite right, so I put some in the collecting bag for later identification.

According to the Checklist of Plants of the Ottawa District by J.M. Gillett, the only members of this genus found in this area are Common Groundsel (Senecio vulgaris) and Balsam Ragwort (S. pauperculus)and the plant I found was certainly neither of these. I finally identified it as S. viscosus, the Sticky or Stinking Groundsel.

On the outing to Fitzroy on September 21st last year I again looked for this species in order to confirm its presence but was personally unable to find it. However, Dr. Dore found two small plants a short distance from the cliff. One interesting question which immediately presents itself: why should a plant which sets abundant seed, with an efficient method of dispersal, be abundant one year and very scarce the next? Maybe its dispersal is too effective and all the seeds were carried out of the area where I first found it.

All three species are very variable in height depending on the fertility of the ground, anywhere from a few inches to 2 feet or more. Only the ragwort is native to North America, the other two being - like myself - of European origin, and while all have bright yellow flowers, those on Common Groundsel have no ray florets and so never look as though they have fully opened. The differences in leaf shapes can best be seen from the drawings. However, the chief identification point in the Sticky Groundsel is that it is sticky. The stems are covered with glands which give off foul smelling (not strong, luckily) sticky liquid when crushed.

To summarize - flowers lacking ray florets, leaves very dissected : S. vulgaris. Flowers with ray florets, plants sticky : S. viscosus. Flowers with conspicuous ray florets, lower leaves entire : S. pauperculus.

BIRDS OF THE FALL

Ron Pittaway

The following is a summary of the highlights of the fall migration. Young birds tend to disperse and wander after the breeding season, making the fall season extremely interesting. Roger Tory Peterson says, "It is the discovery of rarities that gives birding all the elements of a sport. The sport of birding is thoroughly enjoyed when played hard, such as the tallying of great lists and the tracking down of rarities." Many OFNC members have waited years to observe the 'goodies' seen this fall.

Geese, ducks: An adult White-fronted Goose feeding with Canada Geese at Nairn Island during October and early November was the second record in seven years. The pinkish bill was easily seen (Greenland race: yellow) so it perhaps wandered here from the West. A Gadwall at Shirley's Bay on October 12 was our first fall record in several years. A King Eider, also at Shirley's Bay November 11 and 12 was quite tame, allowing several observers to check the position of the feathering on the bill with telescopes.

Shorebirds: A Stilt Sandpiper in breeding plumage at the sewage lagoon near Almonte on August 9 was the only sighting this fall. A Red Phalarope and a Hudsonian Godwit were at Ottawa Beach on September 11. The Hudsonian stayed almost a week, while the Phalarope lingered nearly three. A Marbled Godwit near Nairn Island September 13 'stopped over' a month. The most surprising find was a Ruff, September 7 at Nairn Island. A hurricane passed through the Maritimes and into Eastern Quebec a few days earlier. Could it be that a few of the aforementioned birds were deflected or steered off course? Several 'almost certain' Western Sandpipers were at Ottawa Beach September 25. At the same time, Kingston birders were reporting them in fair numbers. This is one species that will require collecting. Six Purple Sandpipers at Britannia Pier on November 8 were the first record since 1885! A lone bird was seen on November 22 at Shirley's Bay. This sandpiper and the King Eider are regular in small numbers on Lake Ontario. Perhaps they funnel into the St. Lawrence, with a few

coming along the Ottawa River.

Jaeger: Another bird that is regular on Lake Ontario is the Parasitic Jaeger. An adult Parasitic Jaeger was seen along the Ottawa River September 20 to 28. Hamilton's George North maintains that some jaegers fly overland at high altitudes and will come down to feed over large bodies of water late in the afternoon, then continue on migration. Keeping this in mind, we should watch for more jaegers next fall.

OTTAWA RIVER TRAFFIC: From mid-October to freeze-up, Ottawa birders are on the lookout for northern gulls known as 'white-wings'. They move along the Ottawa with the thousands of Herring and Ring-billed Gulls on their way to the Great Lakes. The first Iceland Gull turned up November 1, and a few Glaucous Gulls were around November 15. An adult Great Black-backed Gull was at Nepean Bay on November 29. This gull is common at Montreal, yet scarce here.

LATE LEAVERS: A Ruddy Turnstone at Britannia November 9 was extremely late. A remarkable Tennessee Warbler November 15 sought protection in a cedar hedge, allowing an excellent view to make separation from the Orange-crowned Warbler easy.

WESTERN VISITORS: A Western Meadowlark in full song on September 28 near Shirley's Bay was a surprising find. It's fun to search the migrating groups of Slate-colored Juncos in hope of spotting an Oregon Junco. Two were seen October 11, and another has remained at a feeder to this writing.

WINTER WANDERERS: What a year for this group! Hundreds of Snow Buntings and Common Redpolls appeared during October, with 3 Hoary Redpolls seen October 25. Red Crossbills have been around since August, feeding on white pines which have an excellent crop of cones. White-winged Crossbills have been seen in lesser numbers, perhaps reflecting the poorer crop of cones on the spruces which they prefer. A few Pine Grosbeaks and Bohemian Waxwings started showing up in November. Add to this the fair numbers of both Three-toed Woodpeckers, Gray Jays and Boreal Chickadees seen so far, and we should have an excellent winter.

Glib Phrases...Don't Accept Them!

A disturbing tendency today is to accept as inevitable the fact that short-term objectives are being pursued at the cost of destroying areas of natural beauty that can never be restored. Terminology that has subtle influences on attitudes is being artfully employed to tranquilize the public into regretful acceptance of crimes against the landscape. To counter the so-called "realistic thinking" that attempts to justify expediency in land-use, let's substitute more accurate, less complimentary terms. People are less willing to go along with "materialistic thinking" or "utilitarian outlooks". As for the stock phrases currently used to excuse the misuse of natural parks, they need to be recognized for what they are.

"YOU CAN'T STOP PROGRESS" is used to cover everything from cutting shade trees in a city to mining in a wilderness park. The implication is that progress has to be economic in nature. The DDT disaster is one result of letting economic progress override all other considerations. Progress in solving environmental problems or toward more attractive surroundings is progress too.

"YOU CAN'T KEEP THE PEOPLE OUT...AFTER ALL THEY PAY THEIR TAXES." This excuses a variety of misuses of parks. One local example is the hideous noise pollution of Gatineau Park by snowmobiles. Be quick to point out the flaw in reasoning here. "Don't exclude <u>people</u>! Exclude unsuitable activities!"

"THIS IS WHAT THE PEOPLE WANT" is used when popular recreation is located in the wrong places. An example is the bulldozing of irreplaceable habitat in a natural park to make swimming beaches. To draw an analogy, it would be just as reasonable to usurp the reading room of the National Archives for square dancing and then claim that this is what the people want. Are we to let the fate of our natural parks (or museums or libraries or art galleries) be decided by that segment of the population that "couldn't care less"?

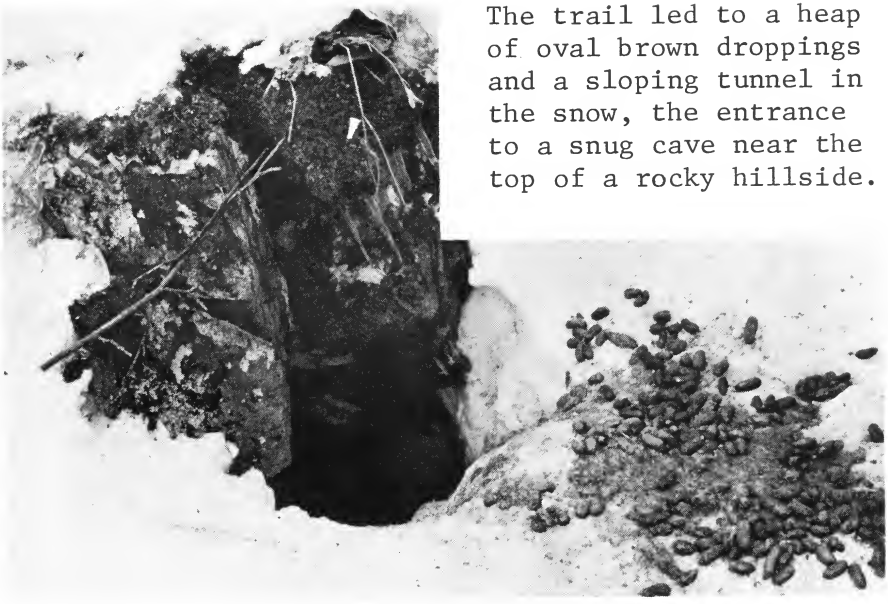
Reject these glib answers, and bring some perspective to bear on the issues by pointing out the irreversible nature of many land-use decisions today. ...S.C.T.

PRICKLY NEIGHBOURS

a snapshotstory by
Anne Hanes

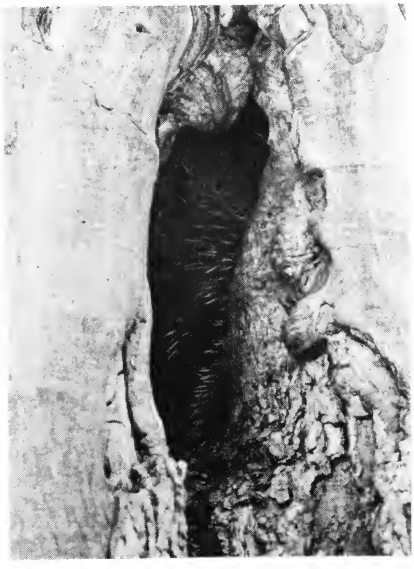
Any cottager will tell you that a porcupine's favourite dish is plywood. Also relished are tool handles, cardboard cartons, any salty wood. Before these toothsome delicacies appeared, however, porkies subsisted on other things, and a few still scrape a living from the bark of such tasty trees as sugar maple and beech.

Where do our bristly friends sleep when they have had their fill? On a snowy Sunday in January we visited a number of porcupines in winter quarters in Gatineau Park. We followed a trail of broad prints, closely spaced in a wide track, which occasionally showed marks where a tail swept the surface as its owner waddled along. The porcupine, a plantigrade mammal like you and me, walks on the soles of its feet, not just on toes and balls as a dog or cat does.



The trail led to a heap of oval brown droppings and a sloping tunnel in the snow, the entrance to a snug cave near the top of a rocky hillside.

Another telltale heap on the snow was beneath a tree cavity. Looking closer, we saw the owner at home. Prints in the snow showed that a fisher had approached the tree base, then continued on its way again. We wonder if it bothered to climb the tree and whether the homeowner was inside at the time. Fishers, we're told, are the only animals that habitually kill porcupines for food, but they can only do so in the open where they first flip the prey over to attack the undefended underside. Wedged into this snug maple hollow, a porcupine could snooze safely enough.



This vine-covered ruin was the romantic retreat for two quilly denizens who set up housekeeping in a roomy hollow beneath a collapsed portion of its roof.

Here is one resident coming up now to see who is disturbing the peace.

BIRD WATCHING IN COMFORT by Ann Childs

Winter always poses problems for bird watching. It is snowy, wet or too cold to be outside for long. I am looking forward to another winter of "bird watching in comfort".

I am very lucky to have friends who have a lovely home in fifteen acres of woodland. The living room has picture windows looking out to three different directions and feeding stations. During a typical day out there you accomplish very little, chasing from one window to another -- watching. Breakfast seems to be the worst time! I have just been handed my breakfast; I take a few mouthfuls and then spot a strange bird climbing the elm tree. It is obviously a woodpecker, completely black backed, white underneath. I get the glasses, which are always on hand, and find it has yellow on the head, and the sides are barred. Reference to the book confirms a male Black-backed Three-toed Woodpecker -- a new species for me. A flock of smaller birds lands in the top of a nearby birch clump. They are very busy hanging and feeding on the catkins. The light isn't too good. One has a pinkish breast, another has a dark coloured head: redpolls? As they fly to another clump the light is better. They are definitely redpolls.

By the time you return to the table your breakfast is cold! To help eat cold egg and bacon you just watch the antics of the chickadees on the bird table. You would think each one owned it the way they chase each other off. A White-breasted Nuthatch manages to secure some breakfast while the chickadees are busy arguing. Blue Jays fly from tree to tree and then, down -- its their turn! Chickadees and nuthatches attempt to land but find it occupied by someone too big to contend with so go on to the fat basket. Hairys and downys have been climbing tree after tree, waiting, so down they come. A junco hops under the feeding table picking up the fallen pieces.

Before you realize it, half the morning has gone! Dish washing time. That's no chore here; there is a feeding table attached to the window above the sink. The birds are so tame they don't worry, as long as you move slowly. Chickadees and nuthatches are the main visitors. A large yellowish finch lands and takes off again, not quite sure. The Evening Grosbeaks are back. There seems to be only a male; but last year there was a 'scout' and he was soon followed by a large flock which stayed well into spring. He sits for a long time on a birch branch - watching. He'll be down again.

Not lunch time already! Things quieten a little. There is still plenty of activity with the chickadees, nuthatches, hairys and downys. The Blue Jays never give up either. Afternoons don't seem to be a very active time for the birds, so perhaps something else can be accomplished! There are odd bird visitors plus a very fat black squirrel. Despite squirrel-deterrents they still manage to climb up, or do balancing tricks along a thin wire to the hanging fat basket.

Let's brave the elements for a hike! A walk through the woods might easily flush one of the ruffed grouse. A flock of snow buntings landing and taking off along the track indicates winter is really coming. The redpolls are still busy, now feeding on grasses. A flock of tree sparrows flies by. The Pileated Woodpecker might show himself if I'm lucky. He seems to be very shy.

The thought of the roaring log fire lures one inside again. This is the way, sitting in a very comfortable easy chair with the crackling log fire in front of you. Looking to my right I can see the birch clump -- the redpolls, the black-backed, chickadees and the Evening Grosbeak are still busy. Looking to my left I see the main bird table and one fat basket. Nuthatches, -- wait, that's too small for a white-breasted, and it has an eye stripe. The red-breasted is back again.

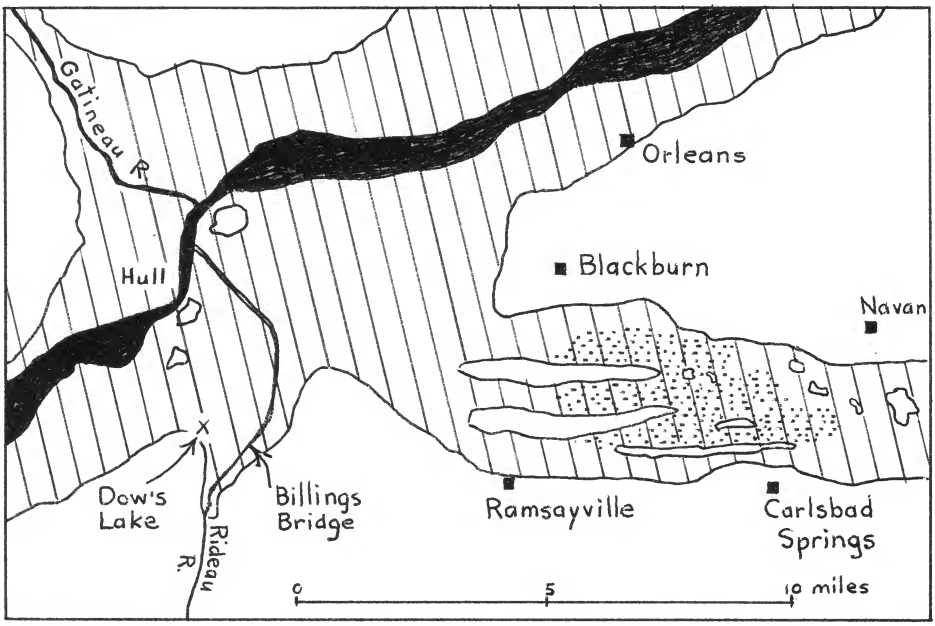
As you think back over the day, the numerous varieties seen so close and in such comfort, you wonder what's in store for the really cold spells. Will the cardinals and the shrike be back? What else will visit us while we watch in comfort?

THE MER BLEUE BOG

The Mer Bleue is our only easily accessible example of a boreal forest bog. It is a dozen miles east of Ottawa in what was, at one of the later stages during the retreat of the last glacier, the south channel of the Ottawa River. (See the hatched area on the map opposite. Notice the long, thin islands in the vicinity of Ramsayville - Blackburn, which are now a prominent feature of the Mer Bleue landscape.)

When the water level dropped, more than 7500 years ago, the present course of the Ottawa River was established, and a shallow, water-filled depression remained on the flat bottom of the south channel. Duckweed, waterlilies, and other pond plants soon took root in this stagnant water, eventually building a layer of organic material which could support sedges and cottongrasses. Sphagnum mosses began and continued to form ever-thickening clumps among the sedges until a thick mossy layer covered the whole pond.

THE MER BLEUE BOG off the northwest of Poplar Island
photo by Joyce Dunston



AN ANCESTRAL OTTAWA RIVER

Present course of the Ottawa River

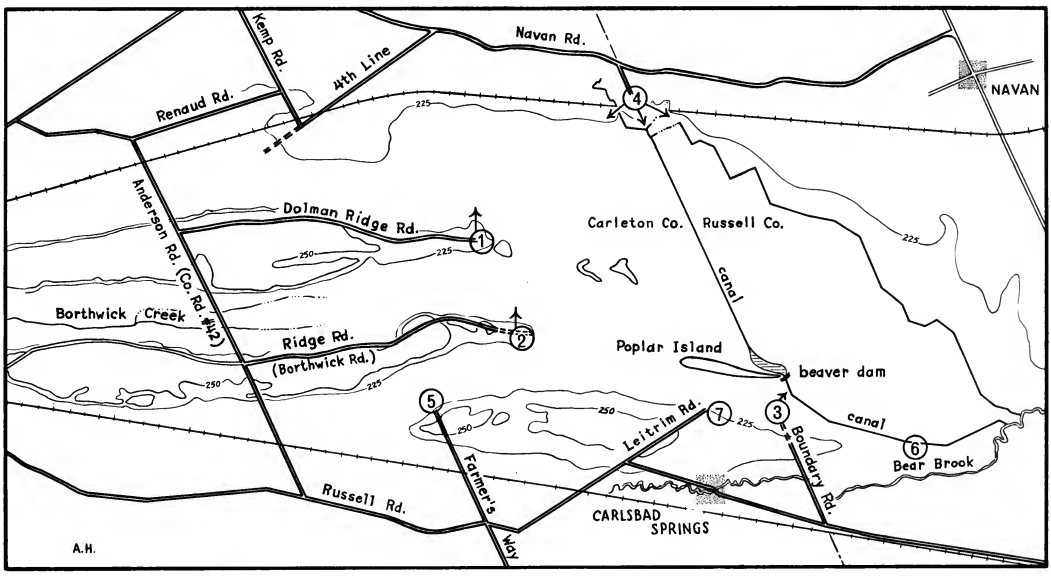
Course of the river before 7500 years ago

The present Mer Bleue Bog

Because stagnant pond water does not contain much oxygen, the older layers of moss do not decompose very much when they die, but rather, they break down somewhat to make the water acidic. You can best picture the bog as a saucer snugly filled with spongy, half-decomposed moss holding an enormous amount of water. The surface is slightly raised in the center.

Only very hardy plants, or those specially adapted to acidic conditions can grow on a bog. Low-growing heaths such as leatherleaf, sheep laurel, bog rosemary, and blueberries become established first, followed by some larger trees, particularly black spruce and tamarack in this climate. These plants grow in the upper, less acidic layers of the moss, and even the largest trees are not too firmly anchored. If you jump up and down near a tree, you can make it sway. (Don't jump too long in one spot or you might fall through - another reminder that solid earth is no closer than some twenty feet below.)

There is no end to the exploring and observing to be done in the Mer Bleue region. Expeditions can vary from an easy drive around the bog to study the general layout and the variety of habitats (only 36 miles including the short trips to the end of every road shown pointing into the bog on the map below) to a fairly strenuous, all-day hike into one particular site.



Site 1: Follow the Dolman Ridge Road eastward to its end (a gate). Notice that you are driving into the heart of the bog along a sandy ridge which was the northmost of the two long islands when the Ottawa River flowed past here. Don't go behind the gate because that part of the bog was used as a bombing range during the Second World War, and it is still used for explosives tests. Cutting across the sandy field to the left, next to the house, brings you to the easiest entrance onto the bog that I know about. Simply wade along the fenceline a short distance to get to extensive blueberry patches, loaded with dusty blue fruit in July. Also look for the dainty pink orchid, Calopogon, which grows here and there in the moss.

Site 2: The Ridge Road tops the second sandy ridge eastward into the bog. Continue driving on the track

across the sand pits until the track drops over a ridge to a wet meadow. In the autumn this is the place to admire the red-gold of the tamaracks on the bog to the north. This part of the bog is so acidic that practically nothing grows on the bog-forest floor except emerald-green sphagnum. The Borthwick Creek, one of the major outlets, flows past here, making for a rather prolonged bit of wading before the actual bog is reached. Perhaps it is better to take advantage of this point to observe the different habitats - wet meadow, reedy margin, and pointed silhouettes of black spruce and tamarack - and their inhabitants.

The damp floor of the sandpit itself has been rapidly colonized by several types of interesting plants: the bushy-tailed bog clubmoss, the insectivorous sundew, and two orchids: Loesel's twayblade and nodding ladies'-tresses.

Site 3: At the end of the Boundary Road is the route to perhaps the most interesting part of the bog. Here one must deal with the drainage canal which surrounds that section of bog which is in Russell County. Once over the canal, one can push on in a northeast direction through alder thickets and marsh to another excellent blueberry region. There is a good assortment of bog plants - multitudes of pitcher plants, for instance, and dense colonies of the orchid, rose pogonia.

Westward, the ridge of Poplar Island gives a good view of a beaver lodge and pond in the dammed drainage canal. The west end of the island gives access to an open black spruce - tamarack region. One wonders whether the rare orchid, southern twayblade, reported from the Mer Bleue in 1893, could still be growing in this sheltered corner. Perhaps the elusive white-fringed orchid can be found here too.

Site 4 is the best lookout on the Mer Bleue - a vast green dish of moss and trees set in among the low, sandy ridges.

Sites 4, 5 and 6 offer the explorer additional and potentially interesting routes onto the bog. Don't be too hasty about trying Site 7, however, because local lore has it that the mossy layer is thin and full of holes here.

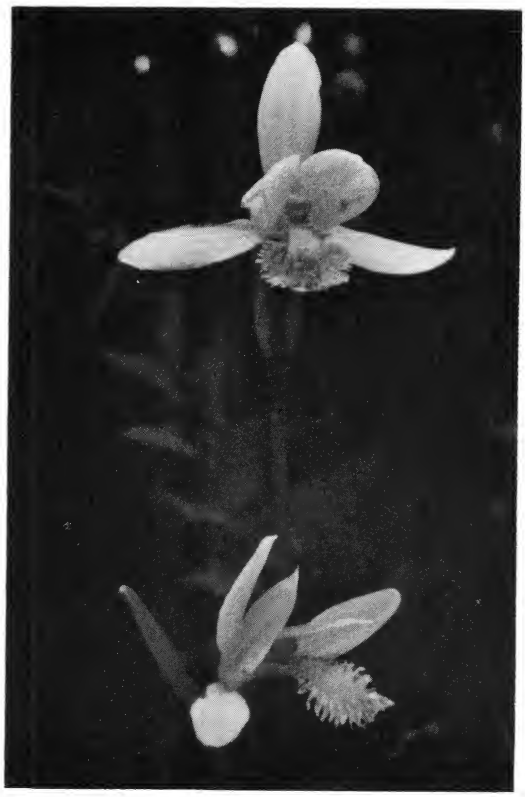
USEFUL REFERENCES FOR FURTHER STUDY

1 L.J. Chapman and D.F. Putnam's The Physiography of Southern Ontario, especially pages 37 to 50 for a complete story of the retreat of the last glacier and how it influenced the topography of this region.

2 The Canadian Field-Naturalist, Volume 83, issue 1, (1969) for the beginning of a series on the Mer Bleue. This particular issue is introduced with a good description of the bog and its recent history.

3 D.M. Baird's Guide to the Geology and Scenery of the National Capital Area, pages 24 to 28, and especially page 27, which is a four-section fold-out aerial photograph of almost the entire Mer Bleue.

4 George McGee's Let's Go Birding -- in the Ramsayville Area, Trail & Landscape, Volume 1, page 48.



TWO BOG ORCHIDS: Rose Pogonia and Loesel's Twayblade - Joyce Dunston

Yours for the Asking .....

ANIMAL LIFE IN CANADA TODAY, by the Zoology Division, National Museum of Natural Sciences, is an admirably compact survey of an enormous subject: 100,000 different kinds of animals living in 3,852,000 square miles. A broad picture is presented of the animal kingdom and the large groups within it, the emphasis being on the patterns of distribution within Canada. Natural and historical factors are cited to explain the occurrence of many faunal elements in our varied environments - mountains, prairies, forests and tundras, the longest coastline of any country and over one quarter of the world's fresh water. Besides touching on what is known of our fauna, the authors point to some areas which await investigation, a challenge to students and naturalists. An attractive foldout page features 14 colour photos from the National Collection of Nature Photographs. Available free from National Museum, Ottawa 4.

ONTARIO SNAKES by Barbara Froom. Appearance, character, habits, life history and Ontario distribution of 15 species are described, illustrated by excellent photos. A strong plea is made for understanding and conserving these beneficial animals, often killed due to unreasoning prejudice. Those who may never learn to like snakes should try to appreciate their valuable role in nature. For a 36-page introduction to some worthwhile friends, write: Conservation Information Section, Dept. of Lands and Forests, Parliament Buildings, Toronto 5, Ontario.

WOLVES AND COYOTES IN ONTARIO has 14 pages of up-to-date information, based on research (some by radio telemetry) and reports of trappers and conservation officers, on two interesting animals. The wolf is being senselessly extirpated from much former range, and has still to be defended in Ontario. Coyote range has extended with the spread of agriculture. Appearance, distribution, numbers, ecology and life history, and current management of both species are described. There are sections on activity, feeding habits, wolf-deer and wolf-people relationships (e.g. successful wolf-howling excursions in Algonquin Park; we're less happy to know that mounted wolf heads are in demand by boy scout troups as totems). Photos, line drawings, and Ontario range map complete the picture. For a copy, write to address given above.

For Ottawa naturalists who were unaware of these activities in assessing river pollution, we reproduce an article from the Ontario Water Resources Commission publication WATERTALK, November 1968, just recently brought to our attention:

MASSIVE SURVEY ON OTTAWA

Observant residents along the stretch of the Ottawa River from Ottawa to Oka (a small village on the Quebec side) may have been surprised by a spurt of unusual activity on the river during a 3-day period last summer.

The careful observer might have noticed a helicopter, mysteriously flying down the river in short hops. Or, at any time of the day or night, a man inexplicably leaning over the side of a small boat, dipping what appeared to be a tin can attached to a rope into the river.

Such incomprehensible operations on a waterway can really mean only one thing: a water quality survey is in progress. In the above instance, what was being witnessed was the testing and sampling procedure of an intensive survey - part of a complex, joint study undertaken by the OWRC and the Quebec Water Board to outline in detail a guide for water quality control for the river basin by 1970.

A close look at the confined, intensive operation gives some idea of the scope and complexity entailed in the overall study. The objective was to thoroughly test and sample - within a 72-hour period of integrated activity between water quality technicians and industrial wastes specialists - a 90-mile stretch of the river running downstream from Ottawa. Into this section of the river drains treated and untreated wastes from a human population of about 600,000 in addition to the wastes of seven paper mills having an oxygen-demanding discharge equivalent to that produced by a population of about 4 million.

The main task force in the 72-hour operation consisted of about 40 OWRC and QWB personnel. The Federal Department of Public Works, Ontario Hydro and Quebec Hydro provided indispensable aid by controlling the water flow in the river in order to provide a basis

for the calculation of the effect of waste effluents. This involved adjusting the flow at nine dams from Temiskaming to Ottawa.

Headquarters for OWRC activities was the Commission's mobile laboratory, moved to the Carleton campus for the duration of the overall study. During daylight hours, two helicopters flew sampling sorties from the mobile laboratory snatching up samples of the water along the river from Ottawa to Hawkesbury. Special equipment in the 'copters automatically measured the dissolved oxygen content and temperature of the river at each touchdown.

Helicopter sampling was supplemented by boats operating at strategic points along the river and along the waterfront of Ottawa itself. Sampling from the boats continued throughout the night, during the intensive survey, in order to provide data for the construction of a picture reflecting the water quality of the river over a 24-hour period.

The upshot of all the activity was that by the time the 72-hour period of integrated effort was ended, 800 dissolved oxygen and temperature tests had been made and 600 samples taken. The objective achieved and water flow in the river back to normal, most of the OWRC team returned to Toronto to begin analysis of data.

Other complicated operations, conducted since the study plan was inaugurated in 1967, include dispersion studies to determine the intermixing of waste water inputs and tributaries with the river, aerial surveillance to locate waste outfalls, and sonar readings to establish a number of river cross-sections to supplement the federal government's hydrographic charts of the river. These operations provided a base for the planning of chemical and biological surveys.

When combined with data derived from biological tests and monthly monitoring runs, the information obtained from the intensive study will aid in enabling OWRC and QWB to develop a mathematical model assessing the quality of water under varying conditions. From this, Ontario and Quebec will be able to establish allowable waste loads for the river, and ultimately, draw up the guidelines for water use development in the basin.

INFORMATION FOR CONTRIBUTORS
to Trail & Landscape

Readership: Present circulation of T & L is about 550. This includes local (Ottawa Valley) members of the OFNC, outside members who request it, subscribers, and local institutions concurrently subscribing to The Canadian Field-Naturalist.

Purposes of T & L are to foster interest in the natural world and matters which affect it, to increase readers' enjoyment of hours spent outdoors, and to further the objectives of the OFNC (see inside front cover).

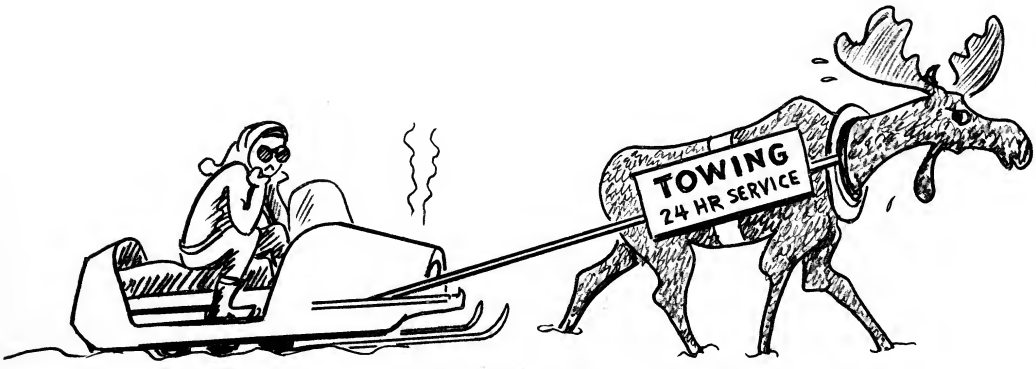
Subject Matter of contributions: Articles and notes may describe any phase of nature observation or study, preferably relating to the flora, fauna or ecology of the Ottawa area, or more broadly, eastern Ontario - western Quebec. We try to include a wide range of subjects; for examples, see back numbers. Especially welcome are observations based on personal investigations or experiences in the natural world. Letters to the Editor might give opinions or suggestions about the magazine or the Club; they must be signed. Contributions are invited from any reader. It is our hope to continue to publish work of both amateurs and professionals. To ensure that material will be understandable to non-technical readers, we recommend use of common names (where such exist), illustrations, and some introductory comment where needed to place an author's specialized study in perspective. Technical terms are not out of place if defined with the layman in mind. Manuscripts need not be typewritten, but should be carefully checked by the author, as 'proofs' cannot be provided prior to printing.

Illustrations: Drawings, photos and maps are welcomed. Original work is preferred; if copyrighted material is used, the author should obtain permission for reproduction. Line drawings in black ink (pen, brush, stipple, spatter, etc.) are more satisfactory for our reproduction method than pencil work with soft shading. Black and white photos reproduce well (glossy prints preferred). Colour transparencies can only be used if B & W prints are obtained from them first, and are not usually as satisfactory as those made on B & W film initially.

Photographer-naturalists are invited to make up a picture story - a series of photos on a related theme, with a little text to give continuity or explanation. Examples: unfolding of a tree bud; activity at a bird feeder; flowers of a vacant lot; aftermath of a snowstorm. See "Bear Trees", Sept. 1969, and "Prickly Neighbours" on page 21.

Publication Dates: Our backlog of material at present is not large. If you have a suitable article or note half-written (in mind or on paper!) the Editors would be pleased to have you finish and submit it soon. We can't promise instant publication, but will acknowledge all contributions, and file acceptable ones to be used in the earliest appropriate issue. Material will be used more or less in order of acceptance, allowing for appearance at the appropriate season, maintenance of diversity, and space limitations. Articles occupying more than 4 or 5 pages may have to be divided and published in more than one issue, although extra pages might be included in one issue if they can be subsidized at cost. Deadlines are one month before date of issue (or when we have enough for a good issue, whichever comes first!)

Author's Reprints Our reproduction method does not allow printing copies of a few pages alone. To obtain reprints, an author may purchase extra copies of the whole issue, at a nominal charge. Requests for these should be made with submission of the article.



Don't Dump Trouble

So, the Ontario Government has decided to ban DDT, and you, in your basement or garage, have half a bag of DDT dust and a bottle or two of sprays containing DDT. Now what?!

Quite obviously you cannot pour them down the sink - that would be worse than using them. They would go straight into the river and increase the pollution no end. Equally obviously you cannot take them out into the bush and lose them (NOT THAT YOU WOULD!!!), nor put them into the garbage bin. What are you to do?

To be quite honest WE DON'T KNOW. The Ontario Department of Health doesn't know either, but they are working on a solution and have promised to keep us informed. In the meantime - please DON'T DUMP DDT. As soon as we know of a safe disposal method we will let you know. Also would you spread the word among your friends and neighbours not to dump. Please, for our health's sake.

T. J. Cole,
Chairman
Education Committee

OUR GRATEFUL APPRECIATION to those people who have in various ways assisted the regular staff of T & L during the past year. Courtesies extended to us by the National Museum of Canada have been invaluable. Special thanks are due to the following: G. Bayly, N.E. Buck, J. Coleman, Alison Dickison, J. Kempt, G. McNeill, W.M. Snyder.

EXCURSIONS AND LECTURES in January and February

Arranged by the E & L Comittee
T. J. Cole, Chairman

Saturday 10 January — A VISIT TO THE NEW GREENHOUSES AT CARLETON UNIVERSITY

Not realy a field-naturalists' subject,but we thought you might appreciate the sight of something growing at this time of the year.
Leader : Bill Illman
Meet : Carleton University Greenhouses
Time : 2.00 p.m.

Friday 23 January — INSECT POPULATIONS AND MAN

A talk by Dr. O. Peck of the Entomology Research Institute. Knowing Dr. Peck, we are assured of a very interesting talk.
Place : Room 156, National Library, Wellington St.
Time : 8.00 p.m.

Sunday 8 February — OWLS, SNOWY AND OTHERS

A trip to find some of our Winter Visitors. Bring a hot drink.
Leader : Bill Holland
Meet : Health & Welfare Bldg. Tunney's Pasture
Time : 9.00 a.m.

Friday 13 February
" 20 "
" 27 " — BIRD RECOGNITION TALKS

George McGee has agreed to give this very popular series once again. A chance for new-comers to the Club to learn the basics of birdwatching and for the more experienced to improve their knowledge.
Place : Room 156 National Library, Wellington St.
Time : 8.00 p.m.

TRAIL & LANDSCAPE

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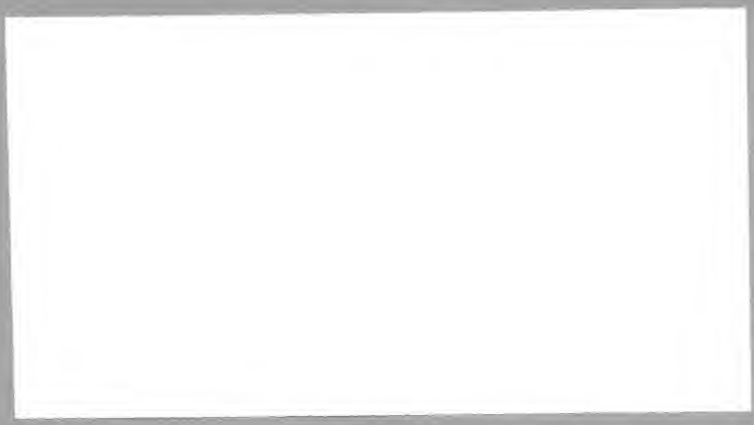

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